

Advanced Math

5-1

(Day 1)

Using Fundamental Identities

Use the given values to evaluate the remaining trigonometric functions.

11) $\tan \theta = 2$, $\sin \theta < 0$

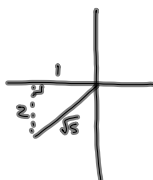
$$\sin \theta = -\frac{2}{\sqrt{5}}$$

$$\cos \theta = -\frac{1}{\sqrt{5}}$$

$$\csc \theta = -\frac{\sqrt{5}}{2}$$

$$\sec \theta = -\sqrt{5}$$

$$\cot \theta = \frac{1}{2}$$



$$\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{2}{1}$$

III

Use the fundamental identities to simplify the expression.

31) $\tan \phi \csc \phi$

$$\frac{\sin \phi}{\cos \phi} \cdot \frac{1}{\sin \phi}$$

$$\frac{1}{\cos \phi}$$

$$\boxed{\sec \phi}$$

41) $\cos(\frac{\pi}{2} - x) \sec x$

co-functions
complements

$$\sin(x) \cdot \frac{1}{\cos x}$$

$$\frac{\sin x}{\cos x}$$

$$\boxed{\tan x}$$

Use the fundamental identities to simplify.

45) $\tan^2 x - \tan^2 x \sin^2 x$

$$\tan^2 x (1 - \sin^2 x)$$

$$\tan^2 x (\sin^2 x + \cos^2 x - \sin^2 x)$$

$$\tan^2 x (\cos^2 x)$$

$$\frac{\sin^2 x}{\cos^2 x} \cdot \cos^2 x$$

$$\boxed{\sin^2 x}$$

$$F(x) = 2x^2 - 5x + 27$$

$$2(x - \frac{5}{4})^2 + 27 - \frac{25}{4}$$

$$F(x) = 4x - 5$$

$$F(x) = 2(x - \frac{5}{4})^2 + k$$

$$2(\frac{5}{4})^2 - 5(\frac{5}{4}) + 27$$

$$\text{vertex } (\frac{5}{4}, \frac{27}{4})$$

$$\frac{25}{8} - \frac{25}{4} + 27$$

$$27 - \frac{25}{8}$$

$$f(x) = 2(x - \frac{5}{4})^2 + \frac{211}{4}$$

Assignment:

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2-14 even,

19-30 all,

32-60 even